

Remarks

Claims 1-5 and 7-9 have been rejected under 35 U.S.C. 102(e) as being anticipated by Lerman (U.S. Patent No. 6,267,741). The Action states that “Lerman discloses a cervical brace...chest plate... and a chin strut including means for attachment to the chest plate and adapted for extension to a point on a chin support of a cervical collar...”. This rejection is respectfully traversed.

Applicants previously provided that Lerman did not disclose a cervical collar. The Examiner responded that Applicants’ arguments are drawn to a difference in terminology. Applicants maintain that the differences are more than just in terminology. Lerman does not disclose a cervical collar. A “collar” is “anything worn around the neck.” (The Scribner – Bantam English Dictionary). The Merriam Webster Dictionary further describes a “collar” as, “a protective or supportive device (as a brace or cast) worn around the neck.” An example of a cervical “collar” is shown in Exhibit A, which shows a structure that surrounds the neck.

Lerman discloses an apparatus to which a patient’s head can be strapped. Lerman’s apparatus encircles the head, it is not “worn around the neck” as a collar would be. Lerman’s apparatus creates a frame around the head, with only a small portion (the bottom of part 34) adjacent to the neck. Accordingly, it cannot be said to be “worn around the neck,” and is therefore, not a “cervical collar.”

Applicants also provide Exhibit B to clearly show the use of Applicants’ claimed invention as an “attachment” to a cervical collar. Claim 1 has been amended to more

clearly describe this. Exhibit B shows Applicants' claimed invention attached to a cervical collar of the type shown in Exhibit A. It shows attachment "to a chin support of a cervical collar," as claimed by Applicants. Comparing Exhibits A and B to Lerman's FIGS. 1 and 3 it can be clearly seen that Applicants' claimed cervical brace that can attach to a cervical collar is not disclosed or suggested by Lerman. Lerman simply does not disclose a chin strut that is attached to a cervical collar.

Claim 34 has been added that includes elements of Claim 1 with the additional element of the chin strut "extending non-vertically from the chin of the wearer to the chest plate." (FIGS. 3B and 6A). This further differentiates Applicants' claimed invention from Lerman. Lerman does not disclose a non-vertical chin strut. Lerman's chin strut-type part 80 extends vertically below the chin support, which is directly below the wearer's chin (col. 5, lines 15-16, FIG. 4 and col. 4, lines 53-54).

Claims 6, 12-13, 19-20, and 23-25 have been rejected under 35 U.S.C. § 103(a) as unpatentable as obvious over Lerman variously alone or in combination with Mattingly. As noted above, Claims 12 and 13 have been deleted. Claim 6 is dependent on Claim 1, and therefore, for the same reasons as stated above, is patentable over Lerman.

Mattingly does not disclose a chin strut having a means for attachment to a chin support of a cervical collar, as Mattingly's disclosed apparatus does not function with, or suggest a cervical collar. Mattingly merely discloses a halo and vest. Therefore, Mattingly does not remedy the shortcomings of Lerman.

Claim 19 discloses a method in which a chin strut is attached to the edge of a cervical collar. Neither Mattingly nor Lerman disclose an attachment to a cervical collar. Therefore, regardless of what the components are termed, Lerman and Mattingly do not disclose or suggest that which is claimed by Applicants. As claim 20 is dependent on claim 19, it too is not anticipated by the combination of Lerman and Mattingly.

Claims 22 and 23 have been combined to form new claim 33. Neither Lerman nor Mattingly disclose a rear strut with a means for independently adjusting the height and angle of attachment of the rear strut to the back plate. Accordingly, these claims are allowable.

New Claims 26, 27 and 30 which depend on claims 1 and 19, respectively, include adjustability of the chest plate, for example by having lower and upper chest plate portions. These claims are supported in the specification on pages 6 and 7, paragraphs 24 and 26, respectively. These adjustments, and the chin strut adjustments allow for desired distribution of forces, which is not recognized by either Mattingly or Lerman. (p.6, paragraph 23)

New Claim 31 includes the adjustability of the chin strut with respect to the chest plate which is supported on p.5, paragraph 23. As Claims 1 and 19 are allowable for reasons described above, so too are Claims 26, 27, 30 and 31, which depend thereon.

Applicants have added New Claims 28 and 29 that include the element that the chin strut is detachably connected to the chin support of the cervical collar. Such a

mechanism is shown in FIGS. 3D and 3E, and described in paragraph 23. Although the specification adequately describes the feature, Exhibits A & B are again offered to assist in understanding of the mechanism.

Applicants thank the Examiner for designating allowable subject matter. Claim 11 has been deleted. Claims 12, 13 and 15 have been combined with claim 11 to form new Claim 29. This combination is based on the Examiner's allowance of any of Claims 14-16 when written in independent form including the limitations of all claims upon which they depend. Claims 17 and 18 have been amended to depend on new Claim 29. As Claim 29 is in allowable form, Claims 17 and 18 depending thereon should also be allowable. According, Applicants respectfully request allowance of Claims 29, 17 and 18.

Accordingly, Applicants believe that all claims are clearly allowable over the cited prior art and respectfully request early and favorable notification to that effect.

Respectfully submitted,
SCHNADER HARRISON SEGAL & LEWIS LLP

Dated: July 8, 2003 By: Joan T. Kluger
JOAN T. KLUGER
Registration No. 38,940
1600 Market Street, Suite 3600
Philadelphia, PA 19103
Direct Dial: (215) 751-2357
Facsimile: (215) 751-2205
E-Mail: jkluger@schnader.com
Attorneys for Applicants

In the Claims

(Copy Showing Amendments)

1. (Twice Amended) A cervical brace for attachment to a cervical collar comprising:
a chest plate adapted to be secured to the thorax of a wearer; and
a chin strut including means for attachment to said chest plate and means for attachment to a chin support of a said cervical collar, said chin support to be disposed adjacent asaid wearer's chin.
2. (Once Amended) The cervical brace of claim 1, further comprising a vest wherein said chest plate is a portion of the ~~comprises a~~ vest.
3. (Once Amended) The cervical brace of claim 2, wherein said vest further comprises a ~~chest plate and~~ back plate.
4. (As filed) The cervical brace of claim 1, wherein said chin strut extends in a straight line from the chest plate to the chin support.
5. (As filed) The cervical brace of claim 1, wherein the chin support is adjustable relative to the chest plate.
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6. (As filed) The cervical collar of claim 5, wherein adjustability is provided due to attachment of said chin support and said chest plate using hook-and-loop fasteners.
7. (As filed) The cervical brace of claim 1, further comprising:
a back plate;

an occipital support; and

a rear strut extending between said occipital support and said back plate.

8. (As filed) The cervical brace of claim 7 further including straps for securing said back plate to said chest plate.

9. (As filed) The cervical brace of claim 7 wherein said rear strut is adjustable and further comprises a strut lock.

10. (As filed) The cervical brace of claim 9 wherein said strut lock comprises an eccentric lever for locking one end of said rear strut to a bracket affixed to said back plate.

~~11. (As filed) A cervical brace comprising:~~

~~a cervical collar having front and rear portions, wherein said rear portion comprises an occipital support;~~

~~a vest comprising a front plate and a back plate; and~~

~~a rear strut extending between said occipital support and said back plate.~~

~~12. (As filed) The brace of claim 11, further comprising a rear strut latch, whereby the relative position of said rear strut may be adjusted both angularly and vertically.~~

~~13. (As filed) The brace of claim 12, further comprising a latch and latch housing disposed on said rear portion.~~

14. (Once Amended) The brace of claim ~~13~~32, wherein said latch and latch housing comprise an eccentric element that moves into and out of engagement with a locking mechanism, whereby the angle of the rear strut relative to the rear portion may be adjusted.

~~15. (As filed) The brace of claim 13, wherein said latch housing comprises one or more receiving elements that engage the latch to adjust the relative distance between the cervical collar and the vest.~~

16. (Once Amended) The brace of claim ~~15~~28, wherein said latch housing and said latch comprise corresponding serrated surfaces that move into and out of engagement upon rotation of said latch relative to said housing.

17. (Once Amended) The brace of claim ~~11~~32, further comprising a head strap extending from said occipital support.

18. (Twice Amended) The brace of claim ~~13~~32, wherein said latch housing comprises one or more extensions and the vest comprises one or more locking slots, whereby said extensions and said locking slots engage said rear strut with said vest.

19. (As filed) A method of supporting one of the cervical spine or upper thoracic spine of an injured patient comprising:

- attaching a cervical collar to the patient;
- attaching a chin strut from an edge of the cervical collar adjacent the chin of the patient to a chest plate and adjusting the relative position of the head by selecting a relative position between the chin strut and the chest plate; and
- attaching the chest plate to the patient's thorax.

20. (As filed) The method of claim 19, further comprising:

- attaching an occipital support to the patient;
- attaching a rear strut to the occipital support;
- attaching a back plate to the patient; and
- adjusting the rear strut and locking the rear strut to the back plate.

~~21. (As filed) A cervical brace comprising:~~

~~a cervical collar having front and rear portions, wherein said rear portion comprises an occipital support;~~

~~a vest comprising a front plate and a back plate;~~

~~means for attaching said front plate to said back plate;~~

~~means for attaching said collar and vest; and~~

~~a head strap extending from said occipital support.~~

22. ~~(As filed)~~ A cervical brace comprising:

~~a cervical collar having front and rear portions, wherein said rear portion comprises an occipital support;~~

~~a vest comprising a front plate and a back plate means for attaching said front plate to said back plate; and~~

~~— a rear strut extending from said back plate to said rear portion.~~

23. ~~(As filed)~~ The cervical brace of claim 22 wherein said rear strut includes means for independently adjusting the height and angle of attachment of said rear strut to said back plate.

24. (Once Amended) A cervical brace comprising:

a cervical collar having front and rear portions, wherein said rear portion comprises an occipital support;

a vest comprising a front plate and a back plate, and means for attachment of said front plate to said cervical collar front portion, wherein said back plate is free from attachment to said cervical collar rear portion.

25. (As filed) A cervical brace comprising:

a cervical collar having front and rear portions, wherein said rear portion comprises an occipital support;

a vest comprising a front plate and a back plate; and

means for attachment of said collar to said vest, wherein said front plate comprises a lower plate slidably and lockably engaged to an upper plate to thereby allow adjustment of the height of said front plate.

26. (New Claim) The method of claim 19 further comprising:

adjusting the vertical height of the chest plate independently of said adjustment of the relative position of said chin strut and said chest plate.

27. (New Claim) The cervical brace of claim 1 wherein said chest plate comprises a lower portion and an upper portion; and

wherein a distance between said lower and upper chest plate portions is adjustable.

28. (New Claim) The cervical brace of claim 1 wherein said chin strut is detachably connected to said chin support of said cervical collar.

29. (New Claim) A cervical brace for attachment to a cervical collar comprising:

a chest plate adapted to be secured to the thorax of a wearer; and

a chin strut attached to said chest plate, said chin strut including means for attaching to said chest plate and means for detachably connecting to a chin support of said cervical collar, said chin support adapted to be disposed adjacent said wearer's chin.

30. (New Claim) A cervical brace for attachment to a cervical collar comprising:

a chest plate adapted to be secured to the thorax of a wearer, said chest plate having a lower portion and an upper portion wherein a distance between said lower and upper chest plate portions adjustable; and

a chin strut attached to said chest plate, the chin strut including means for attaching to a chin support of said cervical collar, said chin support adapted to be disposed adjacent said wearer's chin.

31. (New Claim) The cervical brace of claim 27 wherein said chin strut is adjustably attached to said chest plate.

32. (New Claim) A cervical brace comprising:

a cervical collar having front and rear portions, wherein said rear portion comprises an occipital support;

a vest comprising a front plate and a back plate;

a rear strut extending between said occipital support and said back plate;

a rear strut latch, whereby the relative position of said rear strut may be adjusted both angularly and vertically;

a latch and latch housing disposed on said rear portion; and

wherein said latch housing comprises one or more receiving elements that engage said latch to adjust the relative distance between said cervical collar and said vest.

33. (New Claim) A cervical brace comprising:

a cervical collar having front and rear portions, wherein said rear portion comprises an occipital support;

a vest comprising a front plate and a back plate means for attaching said front plate to said back plate; and


a rear strut extending from said back plate to said rear portion;

wherein said rear strut includes means for independently adjusting the height and angle of attachment of said rear strut to said back plate.

34. (New Claim) A cervical brace for attachment to a cervical collar comprising:

a chest plate adapted to be secured to the thorax of a wearer; and

a chin strut attached to the chest plate and extending non-vertically from the chin of a wearer to the chest plate, the chin strut including means for attachment to said chest plate and means for attachment to a chin support of said cervical collar, said chin support to be disposed adjacent said wearer's chin.



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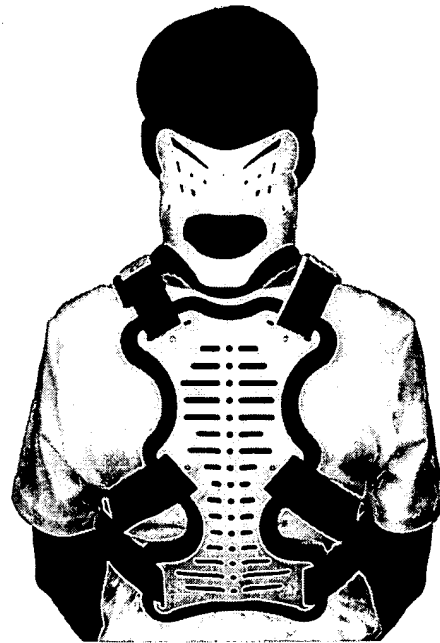
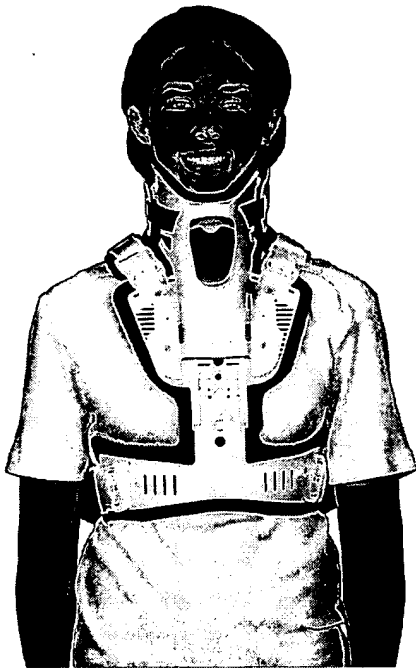
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Modular Chin Strut - Enhances flexion control by directly bridging the chin and sternum. Permits easy up-and-down adjustment.

Chest Plate Adjustment Button - Insures symmetric adjustment (no malleable rods).

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The buckles also simplify removal and reapplication.

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